

WHAT IS CLAIMED IS:

1. An image forming apparatus having an automatic double-side unit and being capable of effecting printing on both surfaces of a paper sheet, comprising:

5        setting means for setting an adjustment mode at a time of effecting printing on both surfaces of the paper sheet;

         first storage means for prestoring predetermined image data that is used in the adjustment mode set by  
10       the setting means;

         first control means for executing a control to form an image on a first surface of the sheet using the image data stored in the first storage means, when the setting means sets the adjustment mode;

15       first measuring means for measuring a size of the image formed on the first surface of the sheet, when the image formed on the first surface of the sheet is subjected to thermal fixation and conveyed;

         second control means for executing a control to  
20       form an image on a second surface of the sheet using the image data stored in the first storage means, when the sheet is reversely fed by the automatic double-side unit;

         second measuring means for measuring a size of the  
25       image formed on the second surface of the sheet, when the image formed on the second surface of the sheet is subjected to thermal fixation and conveyed;

calculation means for calculating correction data for a printing magnification for image formation on the second surface of the sheet, on the basis of a measurement result obtained by the first measuring means and a measurement result obtained by the second measuring means; and

second storage means for storing the correction data calculated by the calculation means.

2. The image forming apparatus according to claim 1, wherein the first storage means prestores predetermined image data including a triangular solid mark and a rectangular solid mark.

3. The image forming apparatus according to claim 1, wherein the first measuring means uses one or more sensors to measure a passage time of the predetermined image formed on the first surface of the sheet.

4. The image forming apparatus according to claim 1, wherein the second measuring means uses one or more sensors to measure a passage time of the predetermined image formed on the second surface of the sheet.

5. The image forming apparatus according to claim 1, wherein the calculation means calculates correction data on the basis of a speed of conveyance of the paper sheet, a passage time of the predetermined image measured by the first measuring means, and

a passage time of the predetermined image measured by the second measuring means.

5           6. The image forming apparatus according to claim 1, wherein the calculation means calculates correction data that ensures a print position and dimensional precision of the image formed on the second surface of the sheet, which thermally contracts due to thermal fixation of the image formed on the first surface of the sheet, in relation to the image formed  
10 on the first surface of the sheet, when the sheet recovers from the thermal contraction.

          7. The image forming apparatus according to claim 1, wherein the calculation means calculates correction data for a magnification in a main-scan  
15 direction and a magnification in a sub-scan direction.

          8. The image forming apparatus according to claim 1, wherein the second storage means stores correction data for a magnification in a main-scan direction and a magnification in a sub-scan direction.

20           9. An image forming apparatus having an automatic double-side unit and being capable of effecting printing on both surfaces of a paper sheet, comprising:

          setting means for setting an adjustment mode at a time of effecting printing on both surfaces of the  
25 paper sheet;

          first storage means for prestoring predetermined image data that is used in the adjustment mode set by

the setting means;

first image forming means for forming an image on  
a first surface of the sheet using the image data  
stored in the first storage means, when the setting  
5 means sets the adjustment mode;

first measuring means for measuring a size of the  
image formed on the first surface of the sheet, when  
the image formed on the first surface of the sheet is  
subjected to thermal fixation and conveyed;

10 second image forming means for forming an image on  
a second surface of the sheet using the image data  
stored in the first storage means, when the sheet is  
reversely fed by the automatic double-side unit;

second measuring means for measuring a size of the  
15 image formed on the second surface of the sheet, when  
the image formed on the second surface of the sheet is  
subjected to thermal fixation and conveyed;

calculation means for calculating correction data  
for a printing magnification for image formation on  
20 the second surface of the sheet, on the basis of  
a measurement result obtained by the first measuring  
means and a measurement result obtained by the second  
measuring means;

second storage means for storing the correction  
25 data calculated by the calculation means; and

control means for executing, when an image is to  
be formed on the second surface of the sheet in

double-side printing, a control to form the image by correcting a print magnification using the correction data stored in the second storage means.

10. The image forming apparatus according to  
5 claim 9, wherein the control means corrects  
a magnification in a main-scan direction and  
a magnification in a sub-scan direction using  
the correction data.

11. An image forming method for an image forming  
10 apparatus having an automatic double-side unit and  
being capable of effecting printing on both surfaces of  
a paper sheet, comprising:

setting an adjustment mode at a time of effecting  
printing on both surfaces of the paper sheet;

15       prestoring predetermined image data that is used  
in the adjustment mode;

forming an image on a first surface of the sheet  
using the prestored image data, when the adjustment  
mode is set;

20       measuring a size of the image formed on the first  
surface of the sheet, when the image formed on the  
first surface of the sheet is subjected to thermal  
fixation and conveyed;

forming an image on a second surface of the sheet  
25 using the prestored image data, when the sheet is  
reversely fed by the automatic double-side unit;

measuring a size of the image formed on the second

surface of the sheet, when the image formed on the second surface of the sheet is subjected to thermal fixation and conveyed;

5           calculating correction data for a printing magnification for image formation on the second surface of the sheet, on the basis of a measurement result relating to the first surface of the sheet and a measurement result relating to the second surface of the sheet;

10           storing the calculated correction data; and  
          executing, when an image is to be formed on the second surface of the sheet in double-side printing, a control to form the image by correcting a print magnification using the stored correction data.